APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,544	10/04/2000	Gordon Margulieux	10002221-1	1131

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EXAMINER
BARNES, CRYSTAL J

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/680,544	MARGULIEUX, GORDON
	Examiner	Art Unit
	Crystal J. Barnes	2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 October 2000</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,9,11-15 and 17-19* is/are rejected.

7)☒ Claim(s) *5-8,10,16 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 October 2000</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The following is an initial Office Action upon examination of the above-

identified application on the merits. Claims 1-20 are pending in this application.

Drawings

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference sign(s) not mentioned in the

description: reference numbers 200 in figure 2, 400 in figure 4, 500 in figure 5,

and 600, 602, 603, 605 in figure 6 are not mentioned in the specification. A

proposed drawing correction, corrected drawings, or amendment to the

specification to add the reference sign(s) in the description, are required in reply

to the Office action to avoid abandonment of the application. The objection to the

drawings will not be held in abeyance.

Specification

3.   The disclosure is objected to because of the following informalities: the

information pertaining to the related application (see page 1) needs to be

corrected/updated; reference character "305" has been used to designate both

"user data line code" on page 12 line 16 and "data line code" in figure 3; reference

character "306" has been used to designate both "control data line code" on page

12 line 16 and "control line code" in figure 3; reference character "307" has been

used to designate both "power data line code" on page 12 line 17 and "power line

code" in figure 3; and "step 210" on page 16 line 10 is not shown in figure 6.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office

action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1-4, 9, 13, 14, 18 and 19 are rejected under 35 U.S.C. 102(b) as being

anticipated by USPN 5,383,137 to Burch.

As per claim 1, the Burch reference discloses a method for emulating an

operation of a dynamically reconfigurable computer system, the method comprising

the steps of providing operational data communication; and employing said provided

operational data to control an operation (see column 5 lines 11-12, "control

operation") of an emulated device (see column 5 lines 20-25, "timer circuit 20,

input/output circuit 28") at said emulator ("emulation system 10").

As per claim 2, the Burch reference discloses further comprising the step

of providing user data communication (see column 5 lines 11-12, "user to input

information") between said host device ("computer 5") and said emulator

("emulation system 10").

As per claim 3, the Burch reference discloses said step of providing

operational data comprises the step of establishing a power level for said operation

(see column 5 lines 41-44, "voltage level") of said emulated device ("timer circuit

20, input/output circuit 28").

As per claim 4, the Burch reference discloses further comprising the step

of adjusting the operation of said emulated device ("timer circuit 20, input/output

circuit 28") according to said established power level (see column 5 lines 45-51,

"voltage level").

As per claim 9, the Burch reference discloses said step of providing

operational data communication comprises the step of establishing an address (see

column 5 lines 64-67, "address") at said host device (see column 5 lines 4-6,

"computer 5") to which said emulated device ("bus drivers 22, 26, 30") is

connected.

As per claim 13, the Burch reference discloses said step of providing

operational data communication comprises the step of enabling control of at least

one component (see column 9 lines 11-13, "code") within said emulated device (see

column 6 lines 15-30, "input/output circuit 28, timer 20") by said host device

("computer 5").

As per claim 14, the Burch reference discloses a system for emulating an

operation of a peripheral device, the system comprising a host device (see column 5

lines 3-6, "computer 5"); an emulator ("emulation system 10") connected to said

host device ("computer 5"); and at least one control data line ("conductor 11")

deployed between said host device ("computer 5") and said emulator ("emulation

system 10").

As per claim 18, the rejections of claims 1 and 2 are incorporated and

further claim 18 contains limitations recited in claims 1 and 2; therefore claim 18 is

rejected under the same rationale as claims 1 and 2.

As per claim 19, the rejection of claim 3 is incorporated and further claim 19 contains limitations recited in claim 3; therefore claim 19 is rejected under the same rationale as claim 3.

6.   Claims 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,768,563 to Porter et al.

As per claim 14, the Porter et al. reference discloses a system for emulating an operation of a peripheral device, the system comprising a host device (see column 4 lines 61-65, "target system 19"); an emulator ("ROM emulator 10") connected to said host device ("target system 19"); and at least one control data line ("socket/header connection 11, bus 120") deployed between said host device ("target system 19") and said emulator ("ROM emulator 10").

As per claim 15, the Porter et al. reference discloses at least one power data line (see column 8 lines 44-45, "power bus 121") deployed between said host device ("target system 19") and said emulator ("emulator 10").

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

8.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN

5,383,137 to Burch in view of USPN 5,751,942 to Christensen et al.

As per claim 11, the Burch reference does not expressly disclose said step of

providing operational data communication comprises the step of providing a fault

detect signal to said host device to indicate a fault condition with said emulated

device.

The Christensen et al. reference discloses

(see column 4 lines 25-30, "... upon occurrence of a trace event during in-

circuit emulation, on-chip logic 170 can provide trace fault information to host

system 10...")

At the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to modify the emulation system taught by the Burch

reference with the in-circuit emulation taught by the Christensen et al. reference to provide fault information.

One of ordinary skill in the art would have been motivated to provide fault information to facilitate software debugging.

9.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,383,137 to Burch in view of USPN 6,002,864 to Heyman.

As per claim 12, the Burch reference does not expressly disclose said step of providing operational data communication comprises the step of dynamically detecting a connection of said emulator to said host device.

The Heyman reference discloses

(see column 2 lines 43-47, "... temporary, dynamically assigned device names ... each time the terminal emulator device establishes a connection with the host computer.")

(see column 2 lines 53-57, "... enabling emulation protocols ... to specify device names ... within a client/host system ...")

(see column 8 lines 40-43, "Terminal emulator devices ... "auto sign-on" function is to be enabled.")

(see column 8 lines 52-57, "... communication interface software waits for a

response ... whether the connection was established. If the connection was

established correctly ...")

At the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to modify the emulation system taught by the Burch

reference to include the emulation protocol taught by the Heyman reference to

enable communication between an emulator and a host.

One of ordinary skill in the art would have been motivated to enable

communication between an emulator and a host to facilitate device testing by

means of direct addressing.

10.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN

5,383,137 to Burch.

As per claim 17, the Burch reference discloses said at least one control line

comprises a motor control line (see column 5 lines 64-67, "control information") for

activating a component ("bus drivers 22, 26, 30") within a device emulated ("timer

circuit 20, input/output circuit 28") by said emulator ("emulation system 10").

The Burch reference does not expressly disclose a motor control line.

However, it would have been logically to one of ordinary skill in the art to include other circuits which emulate specific functions performed by target microcontroller.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the emulation system taught by the Burch reference to include a motor control circuit.

One of ordinary skill in the art would have been motivated to include a motor control circuit to emulate specific motor control functions performed by the target microcontroller.

Conclusion

11.   Claims 5-8, 10, 16 and 20 are objected to as being dependent upon a rejected base claim.

12.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to emulation in general:

USPN 5,539,901 to Ramirez

USPN 5,953,516 to Bonola

USPN 6,684,182 B1 to Gold et al.

USPN 6,571,305 B1 to Engler

JPPN 4-317138 A to WATANABE

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 703.306.5448. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri can be reached on 703.305.0282. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cjb
11 March 2004

RAMESH PATEL
PRIMARY EXAMINER 3/14/04

For Anil Khatri